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NEW SPECIES OF HYDROPTILIDAE (TRICHOPTERA) FROM ALABAMA

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Abstract.—Three new species of Hydroptilidae (Trichoptera) from Alabama, *Hydroptila* ***alabama,*** *Hydroptila* ***recurvata,*** and *Ochrotrichia* ***tuscaloosa*** are described and illustrated.

In the course of a premining assessment study of Tyro Creek and two of its tributaries (Harris et al., 1983), several undescribed species of Trichoptera were collected with black light traps. Tyro Creek is a small, rocky stream located in the Cumberland Plateau in north Tuscaloosa County, Alabama. Two of the species are possibly restricted to the Black Warrior basin, of which the Tyro Creek drainage is a part, but the third species was subsequently collected throughout Alabama. These new species are described below and their affinities noted.

Hydroptila alabama **Harris and Kelley, New Species**

Fig. 1

This species is a member of the *tineoides* group (Marshall, 1979) most closely resembling *H. wyomia* (Denning). The species differs from *H. wyomia* and other members of the group in the structure of the aedeagus. In *H. wyomia* the bulbous portion of the aedeagus narrows to a beak-shaped apex, while in *H. alabama* it narrows to a thin, sharply angled apex (Fig. 1). When the bulbous portion of the aedeagus does not protrude beyond the tenth tergite, the new species is easily confused with *H. hamata* (Morton).

Male.—Antennae 29-segmented. Length 2.0–3.0 mm. Color brown in alcohol. Seventh sternum with a long apicomesal process extending beyond margin of eighth sternite. Lateral lobe of ninth segment slender with both dorsal and ventral setal clusters; internally ninth segment bearing a lightly sclerotized forked structure (the bilobed process of Marshall, 1979) tipped with stout setae at apices. Claspers short, sharply curved ventrad in lateral view, apices heavily sclerotized and contigious along meson in ventral view; midlaterally on each clasper arises a tubular process curved dorso-anteriorally bearing a prominent setae at apex. Tenth tergite lightly sclerotized, posterior portion slightly emarginate in dorsal view, in lateral view anterior portion domed, sloping to a blunt apex. Aedeagus long, tubular, nearly straight with only a narrow neck, lacking titillator; near base of apical portion arises a slender acuminate filament; distal portion bulbous then narrowing to an apex which is sharply bent at a right angle; straight process of ejaculatory duct also arising from bulbous portion.

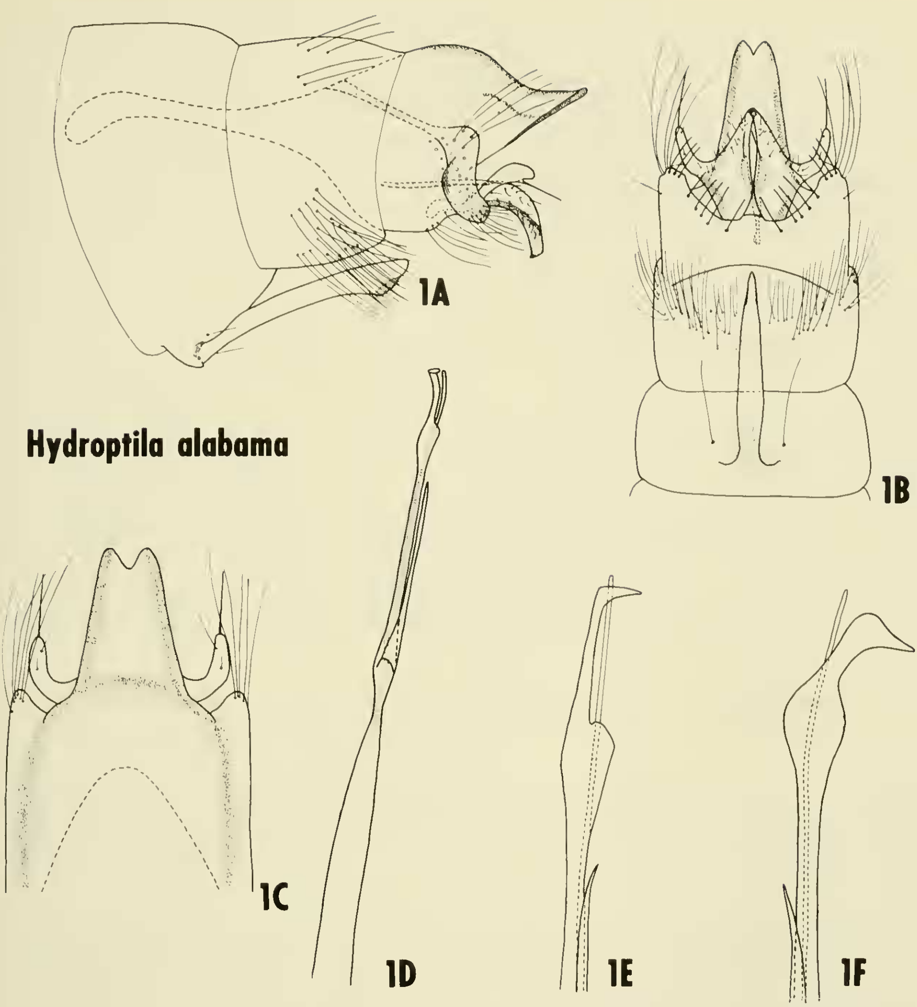

Fig. 1. *Hydroptila alabama* n.sp., male genitalia. 1A, lateral view. 1B, ventral view. 1C, dorsal view. 1D aedeagus. 1E, distal portion of aedeagus. 1F, *Hydroptila wyomia* Denning, distal portion of aedeagus (redrawn from paratype).

Female.—Unknown.

Holotype, male.—ALABAMA, Escambia County, Little Escambia Creek at Hwy. 31, 6 Aug. 1982, O'Neil. The holotype is deposited in the National Museum of Natural History, Washington, D.C.

Paratypes.—ALABAMA, Baldwin County, Turkey Creek at Hwy. 59, 11 May 1982, 1 ♂, Harris and McCullough; Bibb County, Six Mile Creek at Hwy. 25, 13 May 1982, 3 ♂, Harris and O'Neil; Schultz Creek, 4 miles north of Centreville, 25 Aug. 1981, 1 ♂, Harris and O'Neil; Butler County, Pigeon Creek at Hwy. 110, 4 Sept. 1982, 1 ♂, Harris; Calhoun County, Nances Creek at Piedmont, 6 Sept. 1981, 2 ♂, Harris and Handley; Tallassehattchee Creek, 1.5 miles northwest of Jacksonville, 7 Sept. 1981, 1 ♂, Harris and Handley; Choctaw County, Middle Tallawampa Creek at Co. Hwy. 23, 16 May 1982, 5 ♂, Harris; Tallawampa Creek at Co. Hwy. 23, 16 May 1982, 5 ♂, Harris; Cleburne County, Chulafinnee Creek at Co. Hwy. 24, 1 mile east of Abel, 22 May 1981, 2 ♂, Harris and O'Neil; Shoal Creek at Shoal Creek Campground, Talladega National Forest, 6 Sept. 1981, 9 ♂, Harris and Handley; Covington County, Yellow Creek at Co. Hwy. 4, 12 June 1982, 2 ♂, Harris; DeKalb County, Mush Creek at Porterville Gap, 8 miles south of Fort Payne, 22 June 1981, 1 ♂, Harris; Escambia County, Burnt Corn Creek, 5 miles northwest of Brewton, 13 June 1982, 46 ♂, Harris; Etowah County, Little Wills Creek at Hwy. 227, 17 July 1982, 2 ♂, Harris; Fayette County, Tyro Creek, 2.5 miles southeast of Berry, 18 May 1982, 3 ♂, Harris and O'Neil; Jefferson County, Cahaba River at Camp Coleman, 24 May 1981, 1 ♂, Harris and O'Neil; Mobile County, Little Creek, 4 miles southeast of Citronelle, 4 Aug. 1982, 1 ♂, Harris and O'Neil; Monroe County, Beaver Creek at Hwy. 41, 15 May 1982, 13 ♂, Harris; Tuscaloosa County, Tyro Creek, 4.5 miles east of New Lexington, 21 July 1981, 31 ♂, Harris and O'Neil; Tyro Creek, 3.5 miles south of Berry, 18 May 1982, 9 ♂, Harris and O'Neil; Wallace Branch, 5 miles southeast of Berry, 18 May 1982, 5 ♂, Harris and O'Neil; Big Sandy Creek, 4 miles south of Coaling, 9 June 1982, 1 ♂, Harris; Washington County, Bates Creek at Hwy. 43, 4 Aug. 1982, 1 ♂, Harris and O'Neil. Two paratype series are deposited in the National Museum of Natural History; the remaining paratypes are deposited at the Illinois Natural History Survey, Clemson University, Royal Ontario Museum, Geological Survey of Alabama, and collections of the authors.

***Hydroptila recurvata* Harris and Kelley, New Species**

Fig. 2

This species can be placed in the *waubesiana* group (Marshall, 1979) on the basis of the long forked tenth tergum, and is closely related to *H. waubesiana* Betten. It differs primarily in the structure of the claspers which are long and sharply recurved.

Male.—Antennae 24-segmented. Length 2.4 mm. Color brown in alcohol. Seventh sternum with short apicomesal process. Eighth segment with numerous, long, heavily sclerotized spines on ventral and apico-lateral surface. Ninth segment retracted into eighth and posterior portion of seventh segment. Tenth tergum arises from ninth segment as a narrow, parallel-sided, lightly sclerotized process; forking near apex, each fork ending in a prominent spine. Claspers converging in ventral view, sharply bending anterio-laterally near apex and narrowing; with a heavily sclerotized projection near midlength; rounded at base with a pair of slender spines on apico-lateral margin. Aedeagus narrowly constricted at midlength and apex; titillator slender, arising near neck, spiraling anteriorly one revolution; ejaculatory duct arising near basal constriction and protruding at apex.

Female.—Unknown.

Etymology.—Latin: "bent back" referring to the distinctive claspers.

Holotype, male.—ALABAMA, Tuscaloosa County, Wallace Branch, 5 miles southeast of Berry, 15 June 1982, Harris and O'Neil. The holotype is deposited in the National Museum of Natural History.

Paratypes.—ALABAMA, same as above, but 25 July 1983, 1 ♂. Tuscaloosa County, Tyro Creek, 4 miles southeast of Berry, 23 Aug. 1983, 1 ♂, Harris and O'Neil; Fayette County, Tyro Creek, 2.5 miles southeast of Berry, 25 July 1983,

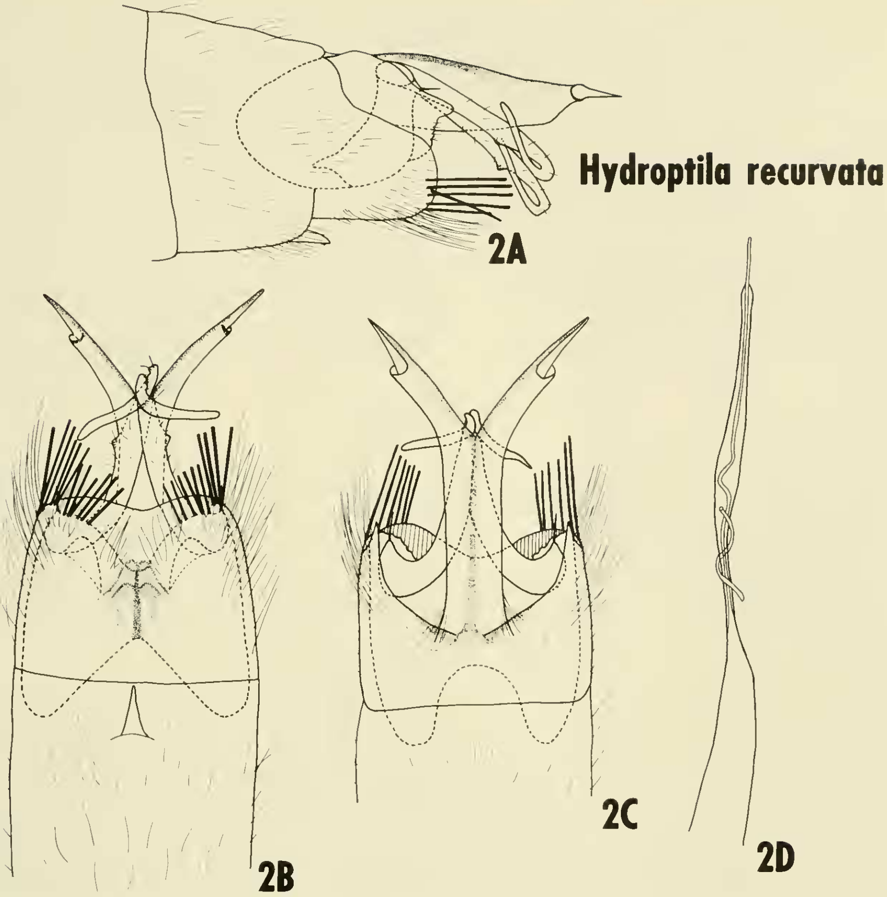

Fig. 2. *Hydroptila recurvata* n.sp., male genitalia. 2A, lateral view. 2B, ventral view. 2C, dorsal view. 2D, aedeagus.

1 ♂, Harris and O'Neil. Paratypes are deposited in the National Museum of Natural History and the Illinois Natural History Survey.

Ochrotrichia tuscaloosa Harris and Kelley, New Species

Fig. 3

This species appears to be a member of the *shawnee* group of Blickle (1979) with affinities to both *O. denningi* (Blickle and Morse) and *O. contorta* (Ross). It can be distinguished from other species in the group on the basis of the sclerite configuration of the tenth tergum.

Male.—Antennae 31-segmented. Length 3.0–3.5 mm. Color brown in alcohol. Ninth segment annular, with dorsum incised on meson to accommodate tenth tergum. Tenth tergum divided into several sclerotized processes (designated after Ross, 1944). Sclerite F coiled near apex, forming a spring-like structure; sclerite C slender, angled at base extending to midlength of sclerite D; sclerite D slender,

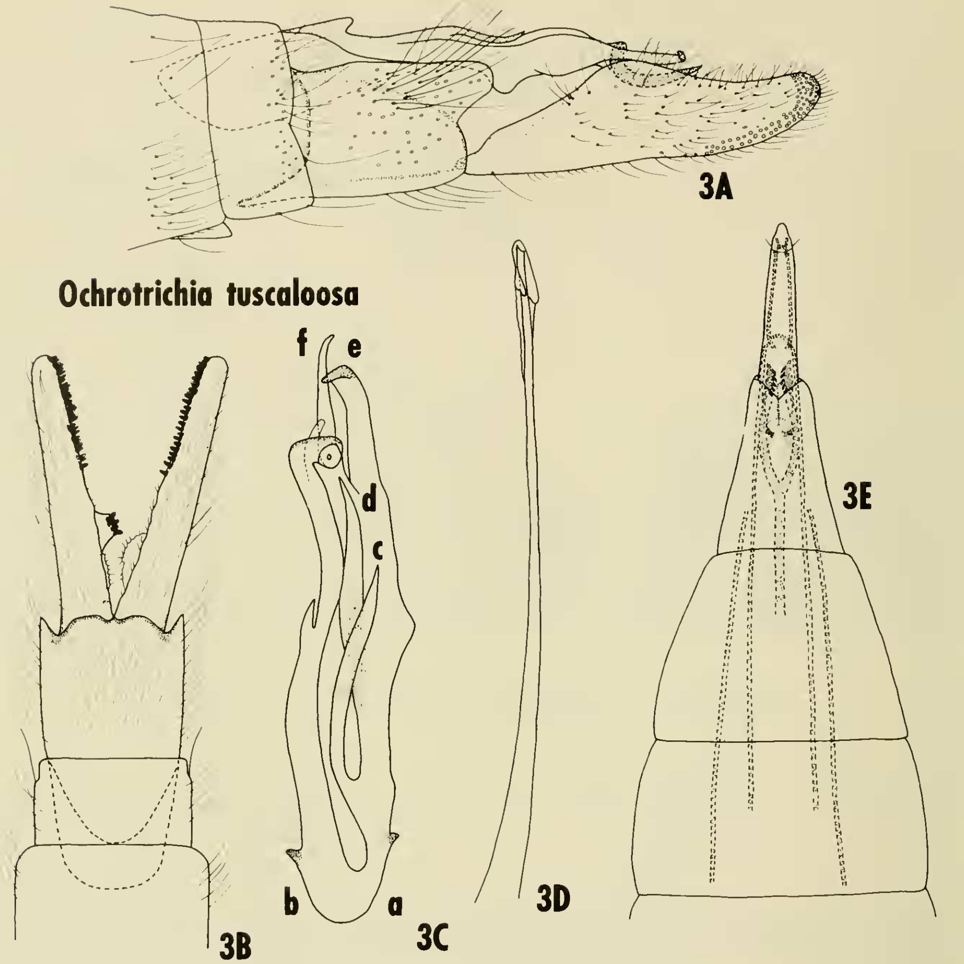

Fig. 3. *Ochrotrichia tuscaloosa* n.sp., male genitalia and female terminalia. 3A, lateral view, ♂. 3B, ventral view of claspers. 3C, tenth tergite, dorsal view, ♂. 3D, aedeagus. 3E, dorsal view, ♀.

reaching to near base of spiral of sclerite F, but separated at least by width of sclerite; sclerite E sharply angled and sclerotized at apex, shouldered near base. Pair of sclerotized denticles at base of tenth tergum. Claspers in lateral view similar in shape to *O. felipe* Ross; parallel-sided in ventral and dorsal views with peg-like denticles on the ventral-mesal surface. Aedeagus simple and tubular, typical for genus.

Female.—Identical to male in general appearance. Antennae 25-segmented. Length 3.1–3.3 mm. Seventh and eighth segments fused. Eighth tergum with deep, posteromedian emargination. Eighth segment with lateral apodemes extending into fifth segment. Ninth segment, membranous and extensile, with two apodemes extending anteriorly into posterior portion of fifth segment, apodemes connected by sclerotized arch at base and apex of the segment. Tenth segment short and conical, with pair of internal rods, lacking cerci. Internal apparatus with spermathecal sclerite protruded anteriorly; a pair of serrate, sclerotized rods posteriorly.

Etymology.—Tuscaloosa is the Choctaw word for "black warrior," the river basin in which the species was collected.

Holotype, male, and allotype.—ALABAMA, Tuscaloosa County, Tyro Creek, 4 miles southeast of Berry, 18 May 1982, Harris and O'Neil. The holotype and allotype are deposited in the National Museum of Natural History.

Paratypes.—ALABAMA, Tuscaloosa County, Tyro Creek, 4.5 miles east of New Lexington, 18 May 1982, 2 ♂, 1 ♀, Harris and O'Neil; Tyro Creek as above, but 14 June 1982, 1 ♂, Harris and O'Neil; Wallace Branch, 5 miles southeast of Berry, 18 May 1982, 2 ♂, Harris and O'Neil. Paratypes are deposited in the National Museum of Natural History, the Illinois Natural History Survey, and Clemson University.

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